uSD-1216 Adapter Board

for AW-NM191-uSD, AW-CM276-uSD and AW-CM286-uSD

User Guide

Rev. C

(For Standard)

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Revision History

Version	Revision Date	Description	Initials	Approved
A	2020/05/14	● Initial Version	Renton Tao	N.C. Chen
B	2020/05/28	● Update VIO and VIO_SD configuration	Renton Tao	N.C. Chen
C	2020/6/5	● Add 3. PCM UART extension ● Update 4. EVB Kits Contents	Renton Tao	N.C. Chen

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1. Introduction

Azurewave provides uSD-1216 adapter board with WiFi/BT module solutions for NXP i.MX RT and i.MX6 Evaluation Kits. The uSD-1216 adapter board supports AW-NM191NF (w/ NXP W8801), AW-CM276NF (w/ NXP W8997), and AW-CM286NF (w/NXP W8887) WiFi combo BT module solutions.

- WiFi through uSD interface is for AW-NM191NF, AW-CM276NF, AW-CM286NF
- BT through UART is only for AW-CM286NF.
- BT through uSD is only for AW-CM276NF.

Main chip	AzureWave Module	uSD Adaptor Board
NXP W8801	AW-NM191NF	AW-NM191-uSD
NXP W8997	AW-CM276NF	AW-CM276-uSD
NXP W8887	AW-CM286NF	AW-CM286-uSD

1.1 Supported I/O to host

- Micro SD(uSD) interface for WiFi or WiFi/BT.
- Arduino headers for Bluetooth through UART interface.
- FFC connector for UART, PCM, and other control signal.
- Embedded UART-to-USB IC as an option for UART.
- Other debug and power interface.

1.2 Supported I/O signal level

I/O\voltage level	1.8V	3.3V
SDIO(3.0/2.0)	V	V
UART	N/A	V

1.3 Supported RF standards

Model \ Standards	Wi-Fi*	BT*
AW-NM191NF	1x1 Wi-Fi 4	N/A
AW-CM276NF	2x2 WiFi 5 (2.4/5GHz)	5.0
AW-CM286NF	1x1 WiFi 5 (2.4/5GHz)	4.2

*Connecting with i-pex gen 4 RF connector

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2. uSD-1216 Adapter Board

2.1 HW Introduction

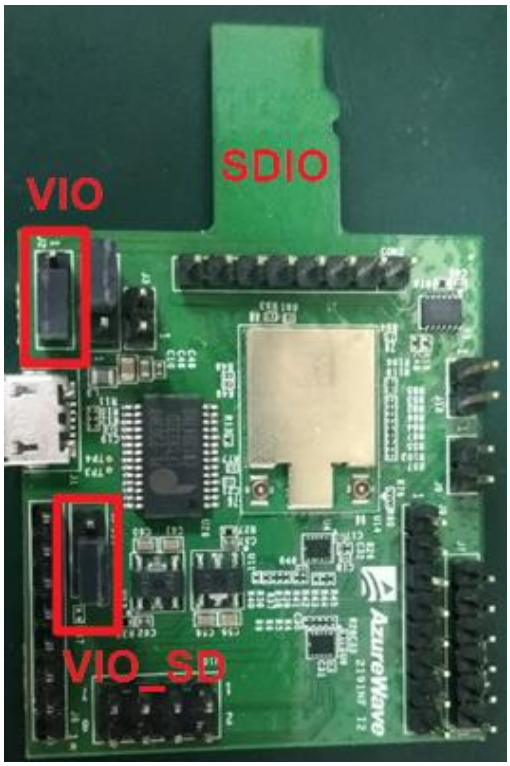
VIO_SD voltage level options

- For 3.3V supply, please connect J11 (2-3).
- For 1.8V supply, please connect J11 (1-2).

VIO voltage level options

- For 3.3V supply, please connect J4 (2-3).
- For 1.8V supply, please connect J4 (1-2).

UART signal and 3.3V power source is configured from FFC connector at BOT side as default.

Top	Bottom
	

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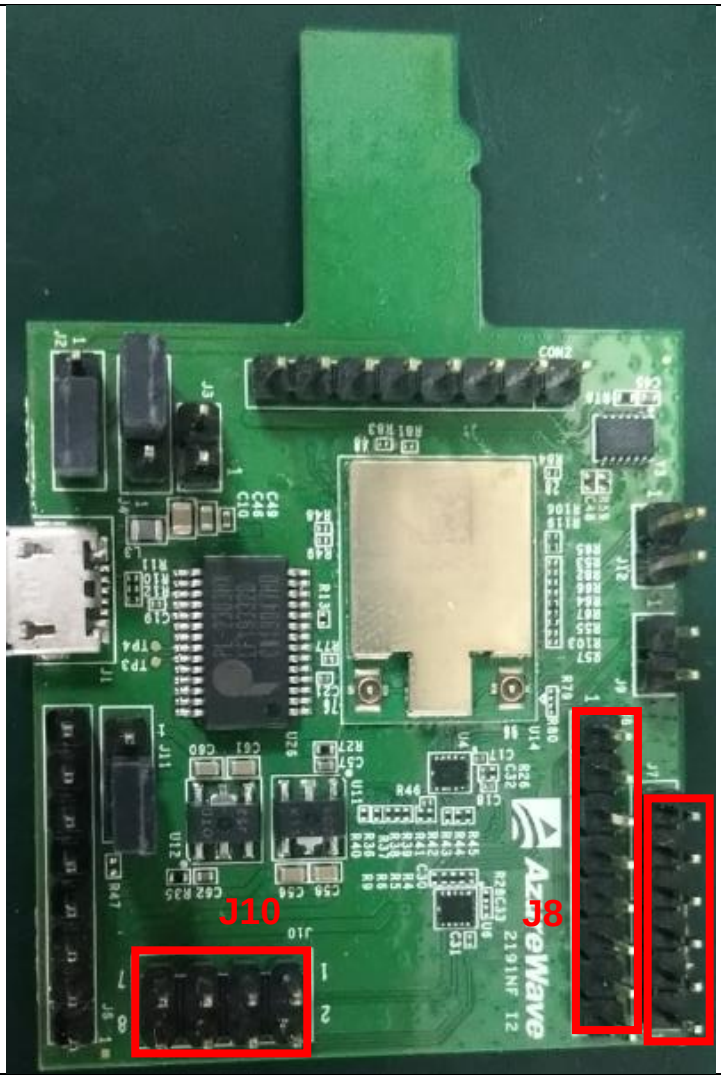
By using headers for Bluetooth through UART interface

- UART_RTS: J7(pin 3) or J10(pin 6)
- UART_TXD: J8(pin 1) or J10(pin 4)
- UART_CTS: J7(pin 4) or J10(pin 8)
- UART_RXD: J8(pin 2) or J10(pin 2)

Headers position


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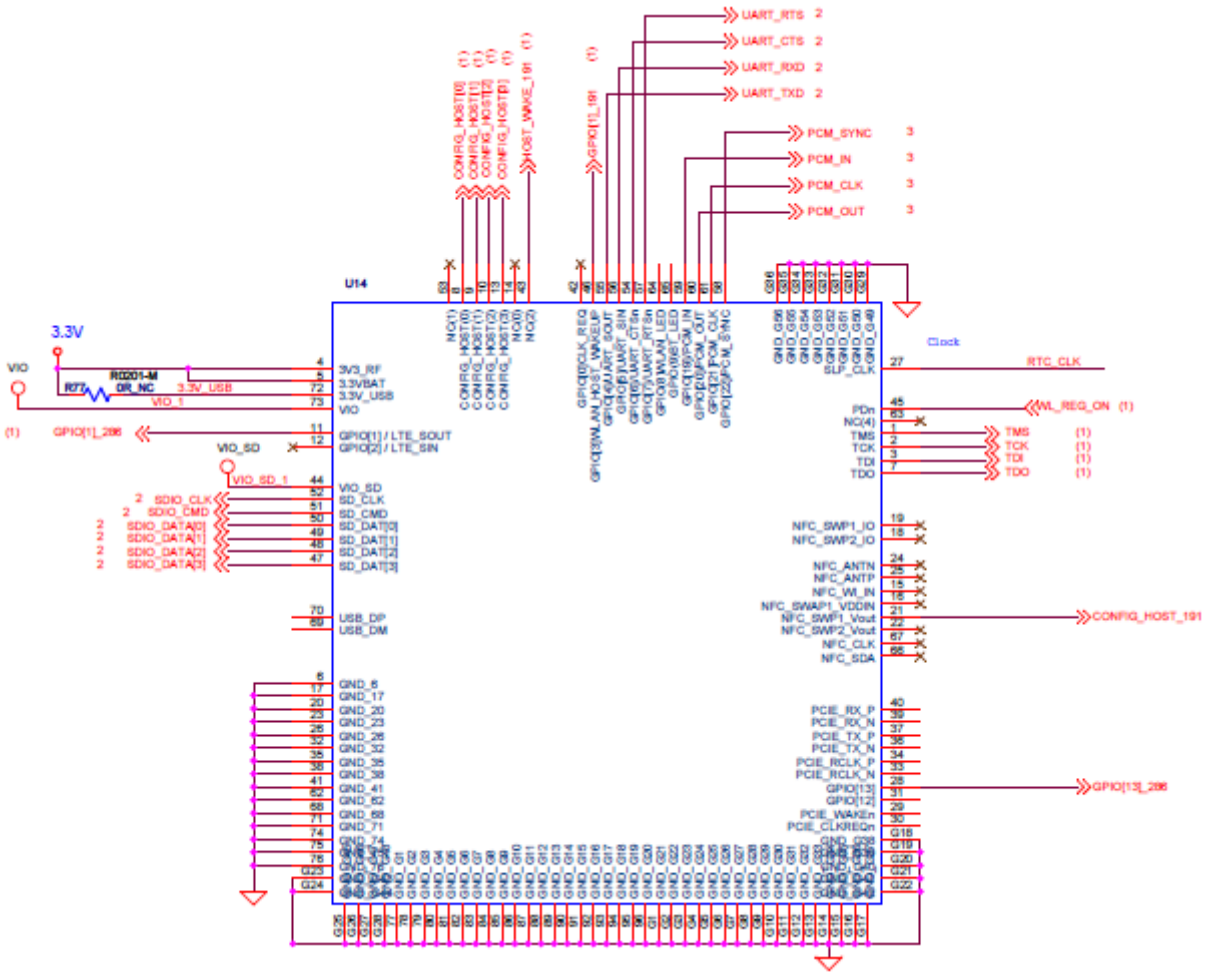
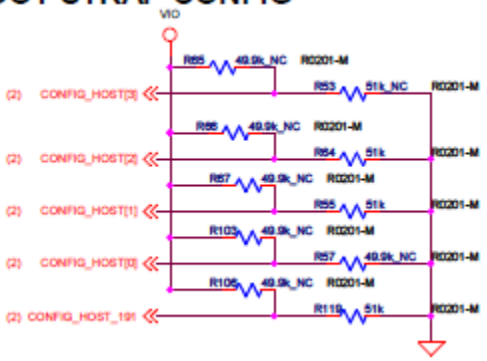
2.2 Schematics



BOOT STRAP CONFIG



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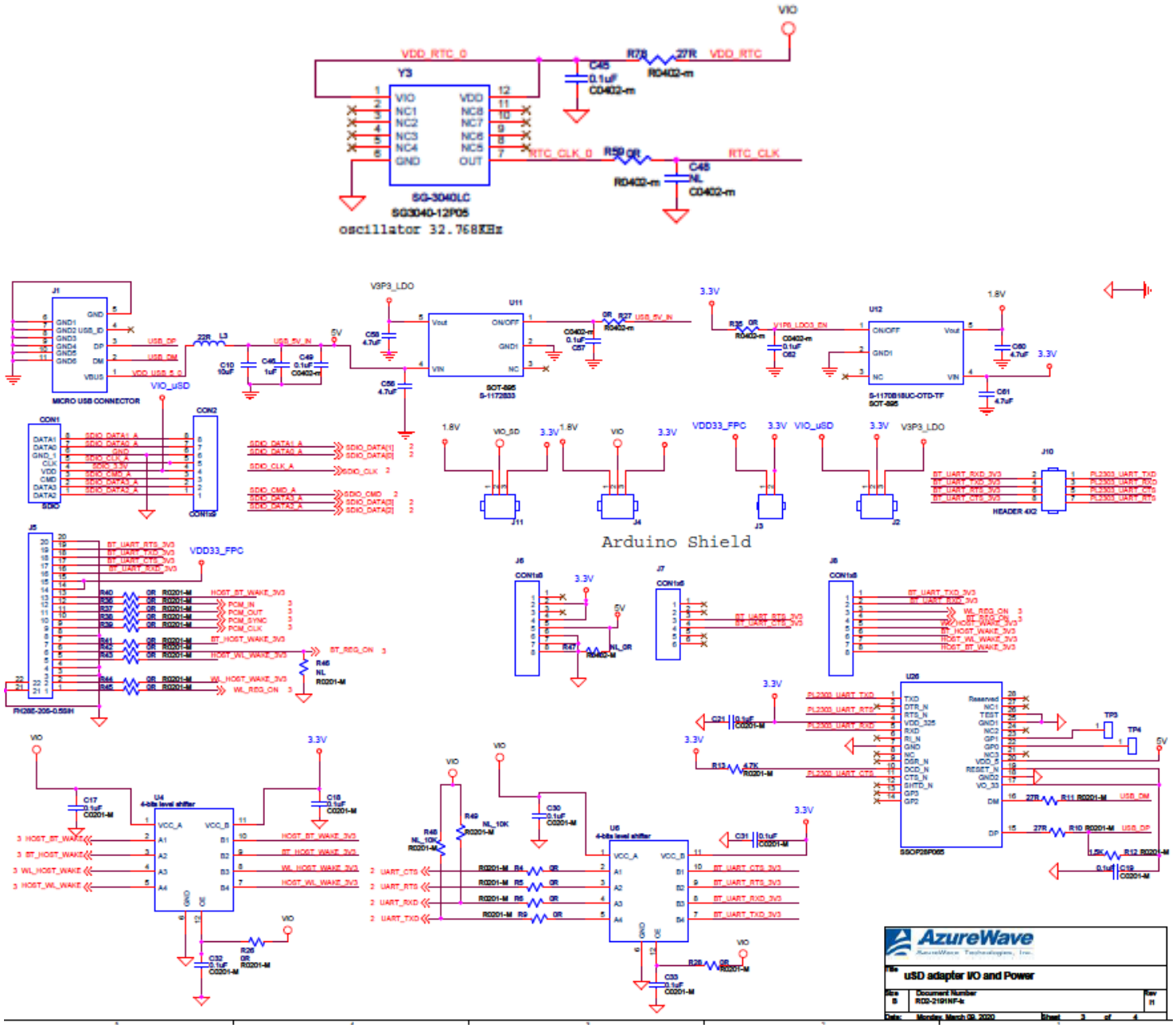

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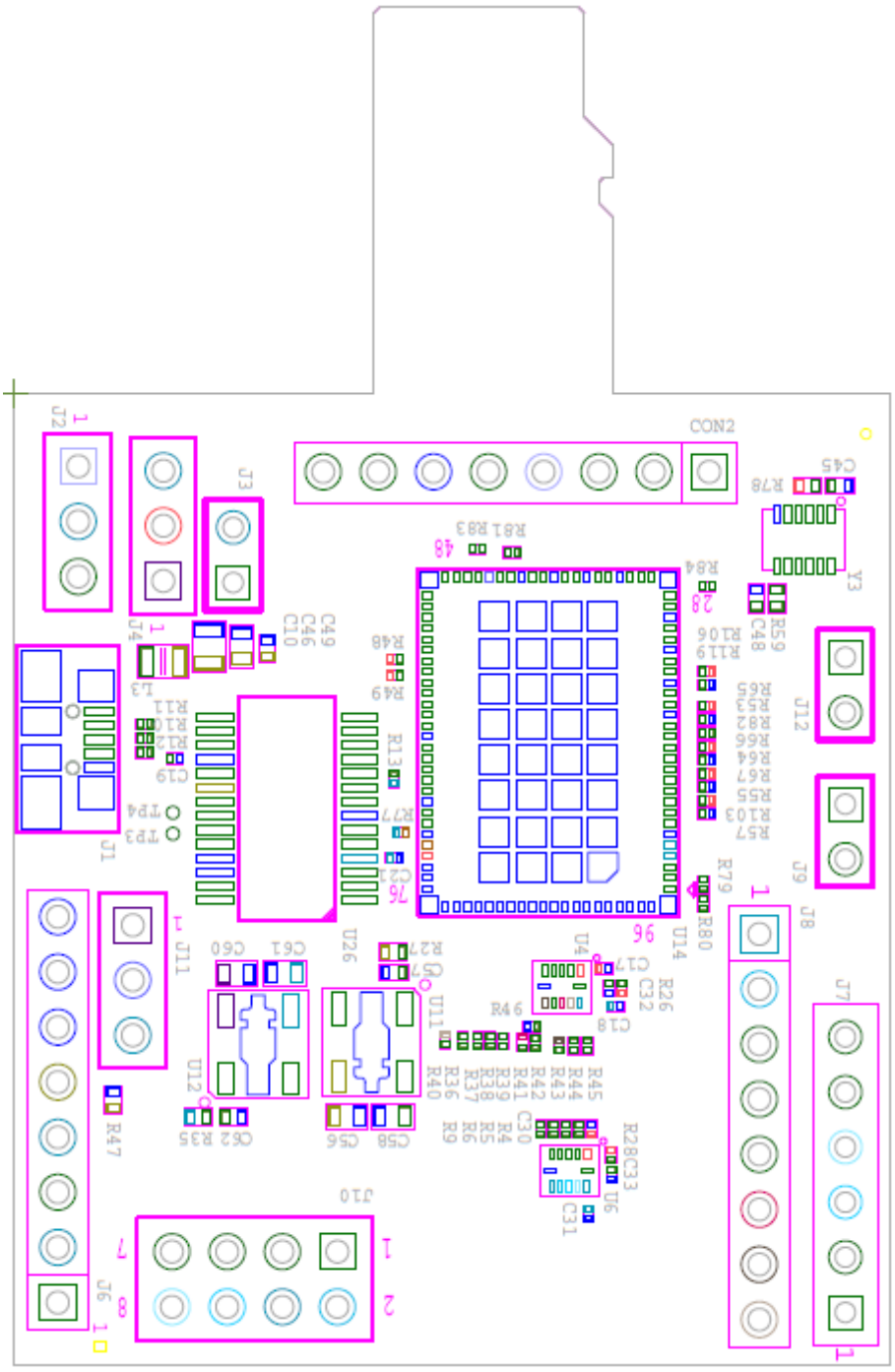
2.3 Placement



TOP View

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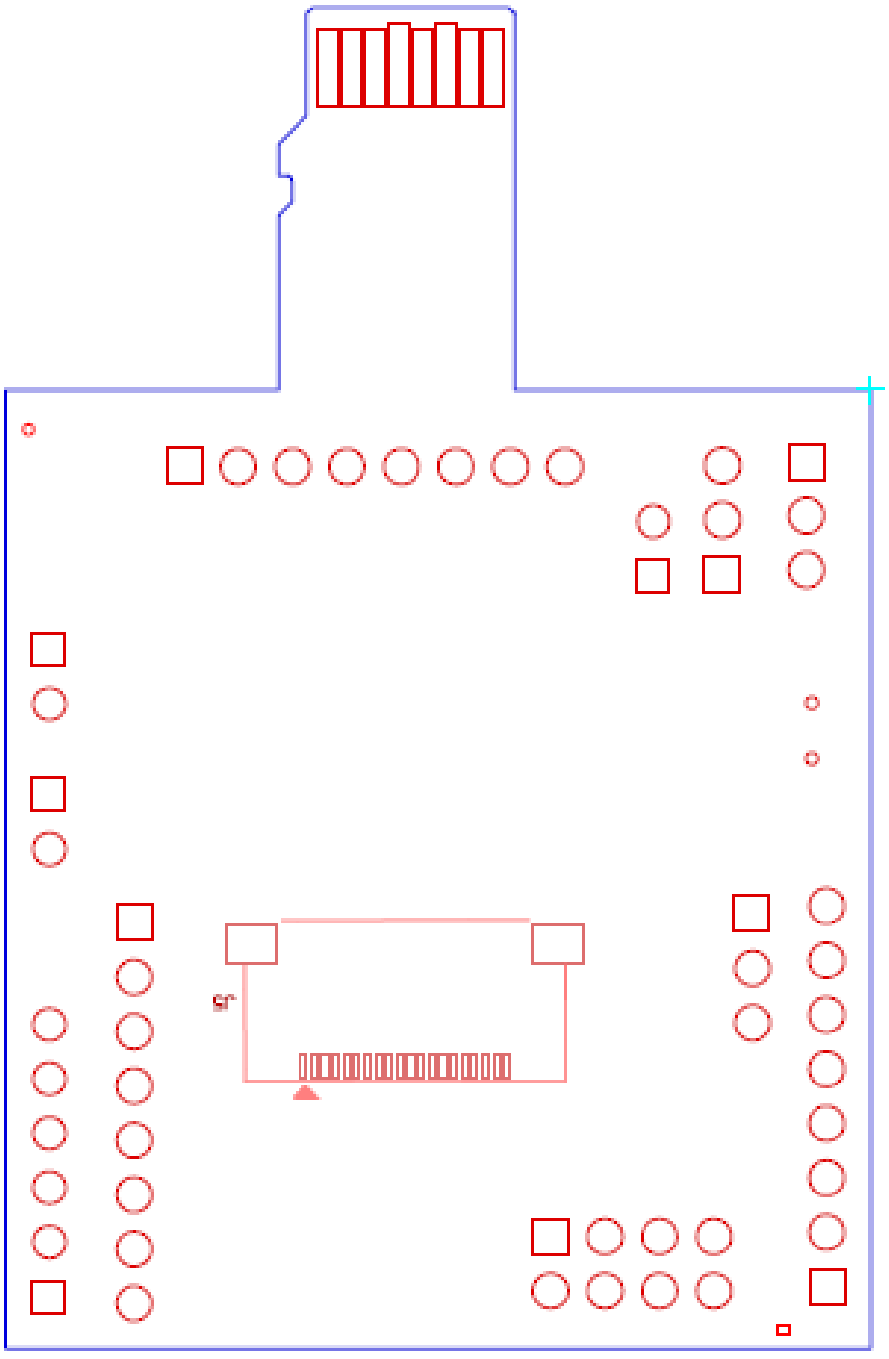

BOT View

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3. PCM UART Extension Adapter Board

This adaptor board is used for these platforms which don't have FFC connector to connect to uSD-1212 Adaptor Board.

3.1 HW Introduction

By using headers for VDD supply

- VDD33_FPC :J7 (pin 5),J9 (pin 5)

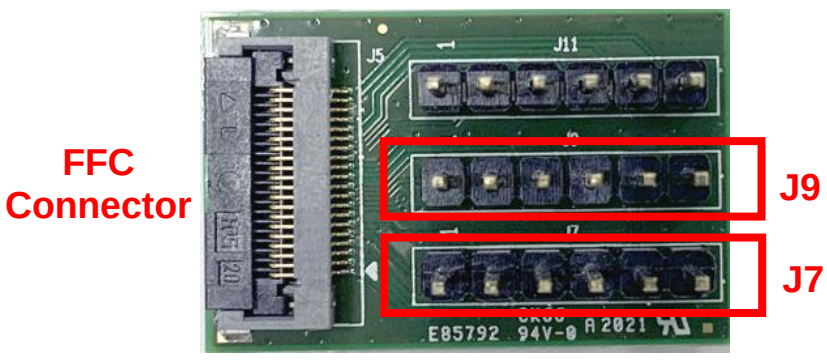
By using headers for Bluetooth through UART interface

- UART_RXD: J7 (pin 1)
- UART_TXD: J7 (pin 2)
- UART_RTS: J7 (pin 3)
- UART_CTS: J7 (pin 4)

By using headers for PCM interface

- PCM_IN: J9 (pin 1)
- PCM_OUT: J9 (pin 2)
- PCM_SYNC: J9 (pin 3)
- PCM_CLK: J9 (pin 4)

Headers position



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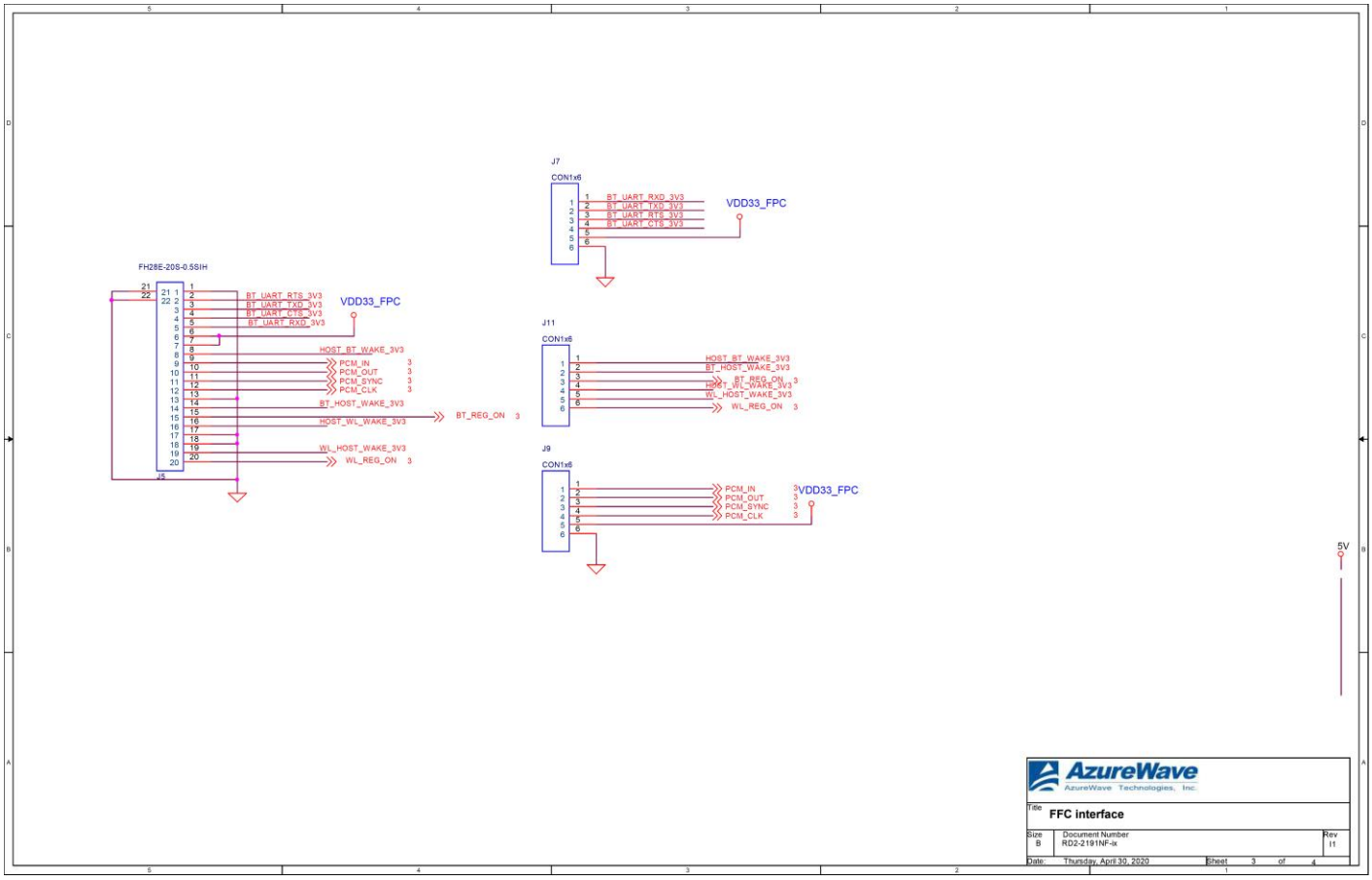
3.2 Schematics



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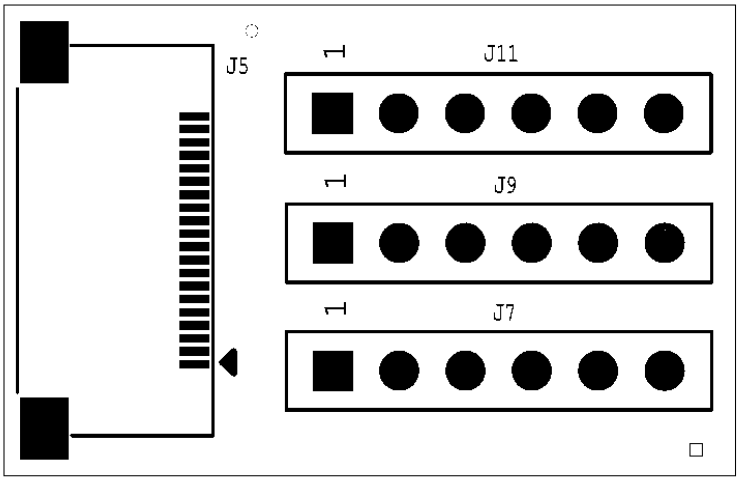
3.3 Placement



TOP View

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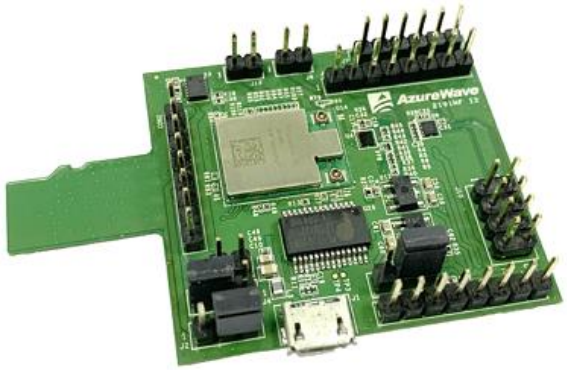
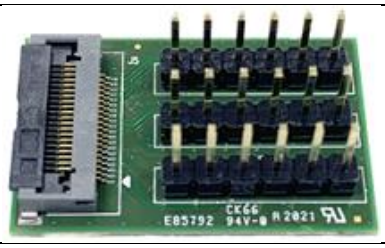
4. EVB Kits Contents

Content	Description
	AW-NM191-uSD or AW-CM276-uSD or AW-CM286-uSD
	75mm, 20 contacts, 0.5mm pitch FFC Cable
	PCM UART extension adapter board (18 mm x 28 mm)
	PIFA Antenna ● Radiation: Directional ● 3D Peak Gain: ■ 2.98dBi (2.4~2.5GHz) ■ 5.16dBi (4.9~5.9GHz) ● Polarization: Linear Vertical ● Connector: IPEX-4 Compatible ● Operating Temp: -20℃ ~ +65℃ ● Storage Temp: -30℃ ~ +75℃

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